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EXAMINER

MAKI, STEVEN D

ART UNIT PAPER NUMBER

1733

DATE MAILED: 12/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/716,059 | <b>Applicant(s)</b><br>LUKICH ET AL. |  |
|                              | <b>Examiner</b><br>Steven D. Maki    | <b>Art Unit</b><br>1733              |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 October 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 5-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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- 1) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- 2) Claims 1 and 5-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the Markush groups for the halobutyl rubber ("selected from ... or ...") is improper. In claim 1 part (B), it is suggested to change "where the halogen is selected from bromine or chloride, preferably bromine" to --where the halogen is selected from bromine and chloride--.

- 3) Claim 12 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 12 broadens claim 1 and thereby fails to further limit claim 1. Claim 1 recites "wherein the volumetric closed cell content of the tire tread, which includes the spaced apart tread lugs, is in a range of from about 2 to about 15 percent based on a volume percent of cellular voids in the total volume of the tread rubber" (emphasis added) whereas claim 12 recites "wherein the volumetric closed cell content of the tire tread is in a range of from about 2 to about 15 percent based on a volume percent of cellular voids in the total volume of the tread rubber". Claim 12 contains the same wording as claim 1 but omits "which includes the spaced part lugs". This omission broadens claim 1.

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4) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Japan 209

5) **Claims 1, 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 209 (JP 8-324209).**

Japan 209 discloses a pneumatic agricultural tire having a tread having lugs, carcass and sidewalls and beads. See figures 1-2, abstract, and machine translation. The tread comprises a layer 6 comprising a diene rubber and having closed cells. See machine translation. Japan 209 does not specifically recite a lug height of 12.5 cm to 80 cm.

As to claim 1, it would have been obvious to one of ordinary skill in the art to provide Japan 209's lugs with an average lug height of 12.5 cm to 80 cm since (1) Japan 209's tread lugs are for a pneumatic agricultural tire and (2) it is taken as well known / conventional per se in the tire art to provide the lugs of a pneumatic agricultural tire with a lug height in a range of 12.5 cm to 80 cm in order to obtain desired traction.

In claim 1, "said tread, including said tread lugs, is a closed cellular structured rubber composition" reads on Japan 209's foamed rubber layer 6, which has closed cells. The foamed rubber layer 6 is part of the tread lugs since the surface of the lugs which contact the ground is the surface defined by the foamed rubber layer 6. Claim 1 fails to require the lugs to consist of the closed cellular structured rubber composition.

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With respect to NTG, it would have been obvious to one of ordinary skill in the art to provide Japan 209's tread with a net to gross of 15-22% since (1) Japan 209's tread is for a pneumatic agricultural tire and (2) it is taken as well known / conventional per se to provide the tread of a pneumatic agricultural tire with a net to gross of less than 35% or less than 25%.

With respect to cell content / size, the claimed closed cell content and closed cell size would have been obvious and could have been determined without undue experimentation in view of Japan 209's teaching that the closed cell foam layer 6 has specific density of 0.02 to 0.8 and a cell size of for example 100 micrometers (abstract, paragraph 21).

As to claim 8, the foamed rubber comprises a diene system rubber. See paragraph 25 of the machine translation.

**6) Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 209 as applied above and further in view of Cole (WO 02/40581) or Egan (US 4249588).**

As to claim 5, it would have been obvious to use a blowing agent such as azodicarbonamide to obtain the closed cells desired by Japan 209 in view of Cole or Egan's suggestion to use a blowing agent to obtain a rubber tread having closed cells.

As to claim 6, it would have been obvious to one of ordinary skill in the art to use the specified blowing agent in Japan 209's foam layer 6 since (1) Cole or Egan suggest using a blowing agent in a rubber composition to produce the cellular structure and (2) a

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"composite of benzenesulfonyl hydrazide and paraffinic oil" is taken as a well known / conventional blowing agent per se for making a closed cell structure.

**7) Claims 7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 209 as applied above and further in view of Ohmori et al (US 4487892) and Russia (SU 1625713).**

As to claims 7, 9 and 10, it would have been obvious to one of ordinary skill in the art to use butyl rubber (copolymer of isobutylene and isoprene) / diene based elastomer and butyl rubber (copolymer of isobutylene and isoprene) since (1) Ohmori suggests using a rubber composition comprising 70-99% by weight at least one rubber such as butyl rubber and natural rubber for a tread of a tire such as an agricultural tire to obtain improved controllability and stability and (2) Russia suggests using butyl rubber for an outer rubber layer of a pneumatic agricultural tire. The use of the claimed thin layer (claim 7) would have been obvious since (1) Ohmori suggests using butyl rubber and diene rubber for a tread and (2) it is taken as well known / conventional per se in the tire art to facilitate adhering a rubber layer to a rubber substrate using a thin layer (cushion gum / rubber cement) of like rubber.

Sandstrom et al

**8) Claims 1 and 5-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandstrom et al (US 2003/0089438) in view of Cole and Japan 209 and optionally Egan.**

Sandstrom et al discloses a pneumatic agricultural tire (farm tractor tire) having a tread, sidewalls, carcass and beads wherein the tread comprises lugs. The lugs have a

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height of 12.5 cm to 80 cm. The tread comprises a *shock dampening* rubber composition comprising (A) 70 to 100 parts at least one **isobutylene based rubber** selected from (1) butyl rubber as a copolymer of isobutylene and isoprene wherein the copolymer contains from about 2 to about 6 weight percent units derived from isoprene, (2) halobutyl rubber as a halogenated butyl rubber where the halogen is selected from bromine or chlorine, and (3) brominated copolymer of isobutylene and paramethylstyrene (paragraphs 12-17) and (B) zero to about 30 parts at least one **diene based elastomer** selected from polymers of isoprene and/or 1,3-butadiene and copolymers of styrene with isoprene and/or 1,3-butadiene. Sandstrom et al does not recite that the tread rubber has a closed cellular structure.

As to claims 1 and 5-12, it would have been obvious to one of ordinary skill in the art to include a blowing agent in Sandstrom et al's rubber composition such that the tread made therefrom, including the tread lugs, is a "closed cellular structured rubber composition" since (1) Sandstrom et al teaches that the disclosed rubber composition provides the tread of a pneumatic agricultural tire with a shock dampening / shock absorbing effect, (2) Cole, directed to the problem of providing a pneumatic tire with a shock absorbing tread, suggests adding blowing agents to relatively hard solid rubber formulations to create a relatively hard closed cell sponge rubber having higher dampening characteristics and (3) Japan 209 suggests providing an agricultural tire having lugs with an outer layer comprising closed cells so as to prevent bringing of mud adhered to the tread to the dry road when the vehicle leaves the muddy fields. Hence, Cole motivates one of ordinary skill in the art to include a blowing agent in Sandstrom et

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al's tread rubber composition for a pneumatic agricultural tire to improve damping properties of the tire. Such an improvement is highly desired by Sandstrom et al since Sandstrom et al characterizes the disclosed rubber composition as being "shock absorbing" (title) / "shock dampening" (paragraph 32). There is a reasonable expectation of success since (1) Japan 409 teaches using a closed cell rubber layer for a pneumatic agricultural tire and optionally (2) Egan teaches that a tire tread having closed cells may comprise butyl rubber or halogenated butyl rubber.

With respect to NTG, it would have been obvious to one of ordinary skill in the art to provide Sandstrom et al's tread with a net to gross of 15-22% since (1) Sandstrom et al's tread is for a pneumatic agricultural tire and (2) it is taken as well known / conventional per se to provide the tread of a pneumatic agricultural tire with a net to gross of less than 35% or less than 25%.

With respect to cell content / cell size, the claimed closed cell content and closed cell size would have been obvious and could have been determined without undue experimentation in view of Cole's suggestion to add blowing agent so as to obtain desired damping characteristics.

As to claim 5, Cole teaches using azodicarbonamide as a blowing agent.

As to claim 6, it would have been obvious to one of ordinary skill in the art to use the claimed blowing agent in Sandstrom et al's tread since (1) Cole suggests using a blowing agent in a rubber composition to produce the cellular structure and (2) a "composite of benzenesulfonyl hydrazide and paraffinic oil" is taken as a well known / conventional blowing agent per se for making a closed cell structure.



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As to claim 7, Sandstrom et al teaches using a thin layer at paragraph 19.

As to claim 8, Sandstrom et al teaches that the rubber composition may comprise 0-30 parts of at least one diene rubber.

As to claims 9-11, Sandstrom teaches using an isobutylene based rubber. See paragraphs 13-16.

obvious type double patenting

9) The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**10) Claims 1, 5-8 and 11-12 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of U.S. Patent No. 6,672,350 in view of Cole and Japan 209 and optionally Egan.**

Claims 1-7 of US Patent 6,672,350 substantially recite a tire as in claim 1 of this application except for the tread being a "closed cellular structured rubber composition". However, it would have been obvious to one of ordinary skill in the art to include a blowing agent in the rubber composition of the tire of claims 1-7 of US Patent 6,672,350 such that the tread made therefrom, including the tread lugs, is a "closed cellular

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structured rubber composition" since (1) the tire of claims 1-7 of US Patent 6,672,350 recites that the lugs of the tread are designed to be shock absorbingly ground contacting, (2) Cole, directed to the problem of providing a pneumatic tire with a shock absorbing tread, suggests adding blowing agents to relatively hard solid rubber formulations to create a relatively hard closed cell sponge rubber having higher dampening characteristics and (3) Japan 209 suggests providing an agricultural tire having lugs with an outer layer comprising closed cells so as to prevent bringing of mud adhered to the tread to the dry road when the vehicle leaves the muddy fields. Hence, Cole motivates one of ordinary skill in the art to include a blowing agent in the tread rubber composition the tire of claims 1-7 of US Patent 6,672,350 to improve damping properties of the tire. Such an improvement is highly desired for the tire of claims 1-7 of US Patent 6,672,350 since the tire of claims 1-7 of US Patent 6,672,350 characterize the tread as having lugs "shock absorbingly ground contacting". There is a reasonable expectation of success since (1) Japan 409 teaches using a closed cell rubber layer for a pneumatic agricultural tire and optionally (2) Egan teaches that a tire tread having closed cells may comprise butyl rubber or halogenated butyl rubber.

With respect to NTG, it would have been obvious to one of ordinary skill in the art to provide the tire of claims 1-7 of US Patent 6,672,350 with a net to gross of 15-22% since (1) the tire of claims 1-7 of US Patent 6,672,350 has lugs with a height of 12.5 cm to 80 cm and (2) it is taken as well known / conventional per se to provide the tread of a pneumatic agricultural tire having lugs of relatively large height with a net to gross of less than 35% or less than 25%.

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With respect to cell content / size, the claimed closed cell content and closed cell size would have been obvious and could have been determined without undue experimentation in view of Cole's suggestion to add blowing agent so as to obtain desired damping characteristics.

As to claim 5, Cole teaches using azodicarbonamide as a blowing agent.

As to claim 6, it would have been obvious to one of ordinary skill in the art to use the claimed blowing agent in the tread rubber composition of claims 1-7 of US 6672350 since (1) Cole suggests using a blowing agent in a rubber composition to produce the cellular structure and (2) a "composite of benzenesulfonyl hydrazide and paraffinic oil" is taken as a well known / conventional blowing agent per se for making a closed cell structure.

As to claims 7, see claim 3 of US Patent 6,672,350.

As to claim 8, claim 1 of US Patent 6,672,350 recites that the rubber composition may comprise 0-30 parts of at least one diene rubber.

As to claim 11, see part A of claim 1 of US Patent 6,672,350.

#### Remarks

11) Applicant's arguments filed 10-11-05 have been fully considered but they are not persuasive.

#### Sandstrom et al

Applicant makes the following arguments: "It is contended that it would not be obvious to one having ordinary skill in the tire art to use the 'outer tire layer' of Cole of a microcellular closed cell sponge rubber created with the Cole-indicated blowing agent(s)

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for the significantly lugged rubber tread of Sandstrom et al to arrive at the Applicant's claimed invention in the absence of the Applicant's own specification and claims without undue experimentation. It is contended that, at most, the disclosure of Cole amounts no more than an invitation to try the microcellar closed sponge rubber of Cole in the lugged tread of Sandstrom." (page 10 of response filed 10-11-05). These arguments are not persuasive.

Sandstrom et al discloses a "TIRE WITH SHOCK ABSORBING CONFIGURED RUBBER TREAD" (title) and teaches that a significantly higher dampening property for the rubber composition is indicative of significantly better shock absorbing ability. See paragraph 47 of Sandstrom et al.

Cole discloses that tires with hard rubber outers, which have low shock-dampening characteristics, do not exhibit good shock absorption characteristics and teaches that a high dampening rubber is obtained using the blowing agent. See page 9 lines 12-15.

Hence, Sandstrom et al and Cole are both directed to the problem of a **tire having a shock absorbing rubber tread** and Cole motivates one of ordinary skill in the art to use a blowing agent in Sandstrom et al's tread composition to form a closed cell tread *to obtain a high dampening rubber so that the tire has improved shock absorption characteristics*. See page 1 lines 25-32, page 2 lines 16-22, page 8 lines 8-12, and page 9 lines 12-15 of Cole.

Applicant argues that Cole's tire such as bicycle tire is not related to a tire of the Applicant's required type. This argument is not persuasive. Sandstrom and Cole are

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both directed to an **off-road tire having lugs**. Sandstrom et al specifically discloses an agricultural tire having significantly spaced apart and raised lugs and Cole specifically discloses a mountain bike tire having lugs. Cole is not limited to bike tires. See page 3 lines 3-5 where Cole states: "An outer tire layer so formulated would be for use on pneumatic tires for any of a variety of vehicles, including but not limited to ....". Japan 209's teaching to use a closed cell layer for the tread of an agricultural tire constitutes evidence as to the suitability of the use of Cole's closed cell teaching in Sandstrom et al. The same is true with respect to Egan which like Sandstrom et al teaches using butyl rubber for a tire tread.

obvious type double patenting

Applicant requests reconsideration of this rejection in view of the Terminal Disclaimer submitted with the amendment (page 5 of response filed 10-11-05). The terminal disclaimer has not been received and consequently, the obviousness-type double patenting rejection stands.

Japan 209

Applicant argues that the tire of the claims, which includes the spaced apart lugs, is composed of a closed cell cellular rubber composition of defined density and cellular size instead of a more simple outer layer of the anti mud sticking closed cell foam rubber layer of Japan 209. This argument is not persuasive since the claimed closed cellular structured rubber composition reads on Japan 209's closed cell foam layer.

Applicant comments that Japan 209's outer closed cell foam rubber layer becomes crushed in order for it to be anti-sticking. Examiner comments that Japan 209

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teaches that if the hardness of the closed cell layer is less than 2, the foamed rubber layer remains crushed and mud easily adheres. See paragraph 14 of the machine translation.

With respect to the use of Cole or Egan with Japan 209, applicant apparently agrees that these references teach the claimed blowing agent. The examiner adds that Japan 209 tire has a tread, including part of its tread lugs, being a closed cellular structured rubber composition.

Applicant argues that Ohmori and Russia do not disclose a tire having tread with substantial lugs composed of a closed cell rubber structure. More properly, Japan 209 tire has a tread, including part of its tread lugs, being a closed cellular structured rubber composition.

12) No claim is allowed.

13) **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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14) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki  
December 21, 2005

  
**STEVEN D. MAKI**  
**PRIMARY EXAMINER**  
12-21-05